Meeting of the Central Valley Flood Protection Board
July 23, 2010

Staff Report – Encroachment Permit

Glenn-Colusa Irrigation District
Davis Weir Replacement Project, Colusa

1.0 – ITEM

Consider approval of Permit No. 18616 (Attachment B)

2.0 – APPLICANT

Glenn-Colusa Irrigation District

3.0 – LOCATION

The project is located within the low water channel of the Colusa Basin Drain in the Northwest, Section 31, Township 15 N, Range 1W, MDB&M, County of Colusa, California, Zone II, NAD 83 (in ft) coordinates are: N2167663 and E655648. The project is east of Williams and south of Abel Road, Colusa, California (see Attachment C)

4.0 – DESCRIPTION

To replace existing flashboard weir structure with an Obermeyer inflatable spillway gate weir using the existing concrete floor and endwalls, construct a new concrete floor section directly downstream to support new inflatable weir across the channel of the Colusa Basin Drain; install (trench) electrical conduits through the left (east) bank levee; place fill and construct a 10 ft by 10 ft control structure on the landside slope of the left bank levee.

5.0 – PROJECT ANALYSIS

The proposed Project consists of the replacement of the existing flashboard weir structure with an Obermeyer inflatable spillway gate weir of 80 ft in length. The Obermeyer weir consists of a series of steel panels supported by inflatable air bladders

providing for adjustment of the weir elevation. The existing concrete floor and endwalls will be reused, and a new concrete floor section will be constructed directly downstream of the present floor between the existing endwalls to support the new inflatable weir. A small structure (10 ft by 10 ft) to house control equipment will be constructed on the landside slope of the left bank levee.

5.1 – Hydraulic Analysis

The Obermeyer weir will be operated at the same elevation as the existing weir to maintain historic upstream water elevations. It will not result in an expansion in the capacity of the facility. Construction of the Project will not result in disturbance in the flood channel because work will be conducted within the perimeter of the existing structure. The proposed work does not modify the existing water surface elevation. Therefore, the hydraulic modeling of the effects of the proposed project was not performed.

5.2 – Geotechnical Analysis

The project requires open trench excavation and structural fill. For the conduit trench 80 cubic-yards of material will be excavated from the levee bank to construct the 3 ft wide by 3 ft deep trench. The excavated native material will be used to backfill (replace and compact) the conduit trench. The backfill process will be placed with 4 to 6 inch thick layers into the trench and compacted to a relative compaction of not less than ninety (90) percent, per ASTM D1557-91, as required by Section 123 (c) (2) and (20) of Title 23.

5.3 – Rationale for Weir Replacement

The main rationale for replacement of the existing weir is to address issues associated with operation and maintenance. They include several factors such as (a) Age and condition of the weir structure requires replacement, (b) To avoid damage to the weir, it must be removed annually during the winter months to allow flood flows and precipitation run-off to pass, (c) Safety of personnel during the seasonal in-water installation and removal of the weir, and flashboard adjustments and trash removal during the operating season, (d) Difficulty maintaining constant water elevation upstream of the Weir, which effects the operation of recapture pumps serving agricultural land, and (e) Difficulty taking accurate water measurements and lack of ability to measure water flows in the winter months.

5.4 – Impact on Functionality

Replacement of the current weir structure with an Obermeyer inflatable weir will improve the function of the weir because (a) The inflatable weir will be constructed within the "footprint" of the existing structure, and will extend the life of the installation into the future, (b) The weir will allow trash to flow through the structure and not require District personnel to make flashboard adjustments or clear trash improving safety conditions for operation and maintenance, and (c) The weir will improve the accuracy of water flow measurement on a year-round basis.

5.4 – Construction Plan

Project construction is scheduled to take place in Fall 2010 to take advantage of low water flows in the Colusa Basin Drain, and any drain flows will be bypassed around the construction site to facilitate the construction work.

6.0 – AGENCY COMMENTS AND ENDORSEMENTS

The comments and endorsements associated with this project, from all pertinent agencies are shown below:

- The U.S. Army Corps of Engineers (USACE) endorsement has not been received but is anticipated to be received prior to the July 23, 2010 Board meeting.
- Reclamation District 2047 has endorsed this application with no conditions.

7.0 – PROPOSED CEQA FINDINGS

Board staff has prepared CEQA findings (see Attachment D) for this project. It was determined that the project is exempt from CEQA.

8.0 – SECTION 8610.5 CONSIDERATIONS

1. Evidence that the Board admits into its record from any party, State or local public agency, or nongovernmental organization with expertise in flood or flood plain management:

The Board will make its decision based on the evidence in the permit application and attachments, this staff report, and any other evidence presented by any individual or group.

2. The best available science that related to the scientific issues presented by the executive officer, legal counsel, the Department or other parties that raise credible scientific issues.

   The accepted industry standards for the work proposed under this permit as regulated by Title 23 have been applied to the review of this permit.

3. Effects of the decision on the entire State Plan of Flood Control:

   The proposed plan will have minimal negative impacts on the State Plan of Flood Control, since as discussed the Obermeyer weir will be operated at the same elevation as the existing weir to maintain historic upstream water elevations. It will not result in an expansion in the capacity of the facility.

4. Effects of reasonable projected future events, including, but not limited to, changes in hydrology, climate, and development within the applicable watershed:

   The Obermeyer weir will remain in place year-round due to the capability to adjust weir elevation from full operational elevation to fully retracted providing unobstructed water flows during the winter months. Therefore, the system is adaptable to account for future hydrology and flood protection changes.

9.0 – STAFF RECOMMENDATION

Staff recommends that the Board determine the project to be exempt from CEQA and approve the permit conditioned upon receipt and review of a favorable U.S. Army Corps of Engineers 208.10 comment letter.

10.0 – LIST OF ATTACHMENTS

A. Resolution (Not applicable, not included)
B. Draft Permit
C. Location Maps and Photos
D. CEQA Findings
E. Project Plan and Details prepared by Hydro, Inc.

Report Completed by:	Ali Porbaha
Design Review:	Ali Porbaha
Hydraulic Review:	Not Applicable
Geotechnical Review:	Ali Porbaha
Environmental Review:	Andrea Mauro and James Herota
Document Review:	Len Marino, Steve Dawson

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DRAFT

STATE OF CALIFORNIA
THE RESOURCES AGENCY

THE CENTRAL VALLEY FLOOD PROTECTION BOARD

PERMIT NO. 18616 BD

This Permit is issued to:

Glenn-Colusa Irrigation District
344 East Laurel Street
P.O. Box 150
Willows, California 95988

To replace existing flashboard weir structure with an Obermeyer inflatable spillway gate weir using the existing concrete floor and endwalls, construct a new concrete floor section directly downstream to support new inflatable weir across the channel of the Colusa Basin Drain; install (trench) electrical conduits 3-foot-deep in waterside slope and through crown to connect to control building structure; place fill and construct a 10- by 10-foot control structure on the landside slope of the left (east) bank levee. The project is located east of Williams and south of Abel Road (Section 31, T15N, R1W, MDB&M, Reclamation District 2047, Colusa Basin Drain, Colusa County).

NOTE: Special Conditions have been incorporated herein which may place limitations on and/or require modification of your proposed project as described above.

(SEAL)

Dated: _____

_____
Executive Officer

GENERAL CONDITIONS:

ONE: This permit is issued under the provisions of Sections 8700 – 8723 of the Water Code.

TWO: Only work described in the subject application is authorized hereby.

THREE: This permit does not grant a right to use or construct works on land owned by the Sacramento and San Joaquin Drainage District or on any other land.

FOUR: The approved work shall be accomplished under the direction and supervision of the State Department of Water Resources, and the

permittee shall conform to all requirements of the Department and The Central Valley Flood Protection Board.

FIVE: Unless the work herein contemplated shall have been commenced within one year after issuance of this permit, the Board reserves the right to change any conditions in this permit as may be consistent with current flood control standards and policies of The Central Valley Flood Protection Board.

SIX: This permit shall remain in effect until revoked. In the event any conditions in this permit are not complied with, it may be revoked on 15 days' notice.

SEVEN: It is understood and agreed to by the permittee that the start of any work under this permit shall constitute an acceptance of the conditions in this permit and an agreement to perform work in accordance therewith.

EIGHT: This permit does not establish any precedent with respect to any other application received by The Central Valley Flood Protection Board.

NINE: The permittee shall, when required by law, secure the written order or consent from all other public agencies having jurisdiction.

TEN: The permittee is responsible for all personal liability and property damage which may arise out of failure on the permittee's part to perform the obligations under this permit. If any claim of liability is made against the State of California, or any departments thereof, the United States of America, a local district or other maintaining agencies and the officers, agents or employees thereof, the permittee shall defend and shall hold each of them harmless from each claim.

ELEVEN: The permittee shall exercise reasonable care to operate and maintain any work authorized herein to preclude injury to or damage to any works necessary to any plan of flood control adopted by the Board or the Legislature, or interfere with the successful execution, functioning or operation of any plan of flood control adopted by the Board or the Legislature.

TWELVE: Should any of the work not conform to the conditions of this permit, the permittee, upon order of The Central Valley Flood Protection Board, shall in the manner prescribed by the Board be responsible for the cost and expense to remove, alter, relocate, or reconstruct all or any part of the work herein approved.

SPECIAL CONDITIONS FOR PERMIT NO. 18616 BD

THIRTEEN: All work approved by this permit shall be in accordance with the submitted drawings and specifications except as modified by special permit conditions herein. No further work, other than that approved by this permit, shall be done in the area without prior approval of the Central Valley Flood Protection Board.

FOURTEEN: The permittee shall maintain the permitted encroachment(s) and the project works within the utilized area in the manner required and as requested by the authorized representative of the Department of Water Resources, Reclamation District 2047 or any other agency responsible for maintenance.

FIFTEEN: The Central Valley Flood Protection Board, Department of Water Resources and Reclamation District 2047 shall not be held liable for any damages to the permitted encroachment(s) resulting from flood fight, operation, maintenance, inspection, or emergency repair.

SIXTEEN: The permittee may be required, at permittee's cost and expense, to remove, alter, relocate, or reconstruct all or any part of the permitted encroachment(s) if removal, alteration, relocation, or reconstruction is necessary as part of or in conjunction with any present or future flood control plan or project or if damaged by any cause. If the permittee does not comply, the Central Valley Flood Protection Board may remove the encroachment(s) at the permittee's expense.

SEVENTEEN: The permittee shall provide supervision and inspection services acceptable to the Central Valley Flood Protection Board. A professional engineer registered in the State of California shall certify that all work was inspected and performed in accordance with submitted drawings,

specifications, and permit conditions.

EIGHTEEN: The permittee is responsible for all liability associated with construction, operation, and maintenance of the permitted facilities and shall defend and hold harmless the Central Valley Flood Protection Board from any liability or claims of liability associated therewith.

NINETEEN: No excavation shall be made or remain in the levee section during the flood season from November 1st to April 15th without prior approval of the Central Valley Flood Protection Board.

TWENTY: The permittee shall contact the Flood Project Integrity and Inspeciton Branch by telephone, (916) 574-0609, and submit the enclosed postcard to schedule a preconstruction conference. Failure to do so at least 10 working days prior to start of work may result in delay of the project.

TWENTY-ONE: At all times during construction, at least one lane of the levee crown roadway shall be kept clear for vehicular access.

TWENTY-TWO: Density tests by a certified materials laboratory will be required to verify compaction of backfill after compaction is complete.

TWENTY-THREE: Backfill material for excavations within the levee section and within 10 feet of the levee toes shall be placed in 4- to 6-inch layers, moisture conditioned above optimum moisture content, and compacted to a minimum of 90 percent relative compaction as measured by ASTM Method D1557-91.

TWENTY-FOUR: Backfill material for excavations within the levee section shall be free of stones or lumps that exceed 3 inches in greatest dimension, organic matter, or other unsatisfactory material and shall be compacted to at least 90 percent relative compaction as measured by ASTM Method D1557-91.

TWENTY-FIVE: Fill on the levee slope shall be keyed into the existing levee section with each lift.

TWENTY-SIX: Compaction tests by a certified soils laboratory will be required to verify compaction of backfill within the levee section or within 10 feet of the levee toe.

TWENTY-SEVEN: The project area shall be restored to at least the condition that existed prior to commencement of work.

TWENTY-EIGHT: The permittee shall submit as-built drawings to the Department of Water Resources' Flood Project Integrity and Inspection Branch upon completion of the project.

TWENTY-NINE: The permitted encroachment(s) shall not interfere with operation and maintenance of the flood control project. If the permitted encroachment(s) are determined by any agency responsible for operation or maintenance of the flood control project to interfere, the permittee shall be required, at permittee's cost and expense, to modify or remove the permitted encroachment(s) under direction of the Central Valley Flood Protection Board. If the permittee does not comply, the Central Valley Flood Protection Board may modify or remove the encroachment(s) at the permittee's expense.

THIRTY: If the project, or any portion thereof, is to be abandoned in the future, the permittee or

successor shall abandon the project under direction of the Central Valley Flood Protection Board, at the permittee's or successor's cost and expense.

THIRTY-ONE: The permittee shall be responsible for repair of any damages to the project levee and other flood control facilities due to construction, operation, or maintenance of the proposed project.

THIRTY-TWO: All cleared trees and brush shall be completely burned or removed from the floodway, and downed trees or brush shall not remain in the floodway during the flood season from November 1 to April 15.

THIRTY-THREE: All fencing, gates and signs removed during construction of this project shall be replaced in kind and at the original locations. If it is necessary to relocate any fence, gate or sign, the permittee is required to obtain written approval from the Central Valley Flood Protection Board prior to installation at a new location.

THIRTY-FOUR: All temporary fencing, gates and signs shall be removed upon completion of the project.

THIRTY-FIVE: The permittee shall be responsible for all damages due to settlement, consolidation, or heave from any construction-induced activities.

THIRTY-SIX: All debris generated by this project shall be disposed of outside the floodway and off the channel.

THIRTY-SEVEN: If the permitted result(s) in an adverse hydraulic impact, the permittee shall provide appropriate mitigation measures, to be approved by the Central Valley Flood Protection Board, prior to implementation of mitigation measures.

THIRTY-EIGHT: Upon completion of the project, the permittee shall submit as-built drawings to: Department of Water Resources, Flood Project Inspection Section, 3310 El Camino Avenue, Suite LL30, Sacramento, California 95821.

THIRTY-NINE: The permittee shall comply with all conditions set forth in the letter from the Department of Army dated XXXXHH, 2010, which is attached to this permit as Exhibit A and is incorporated by reference.

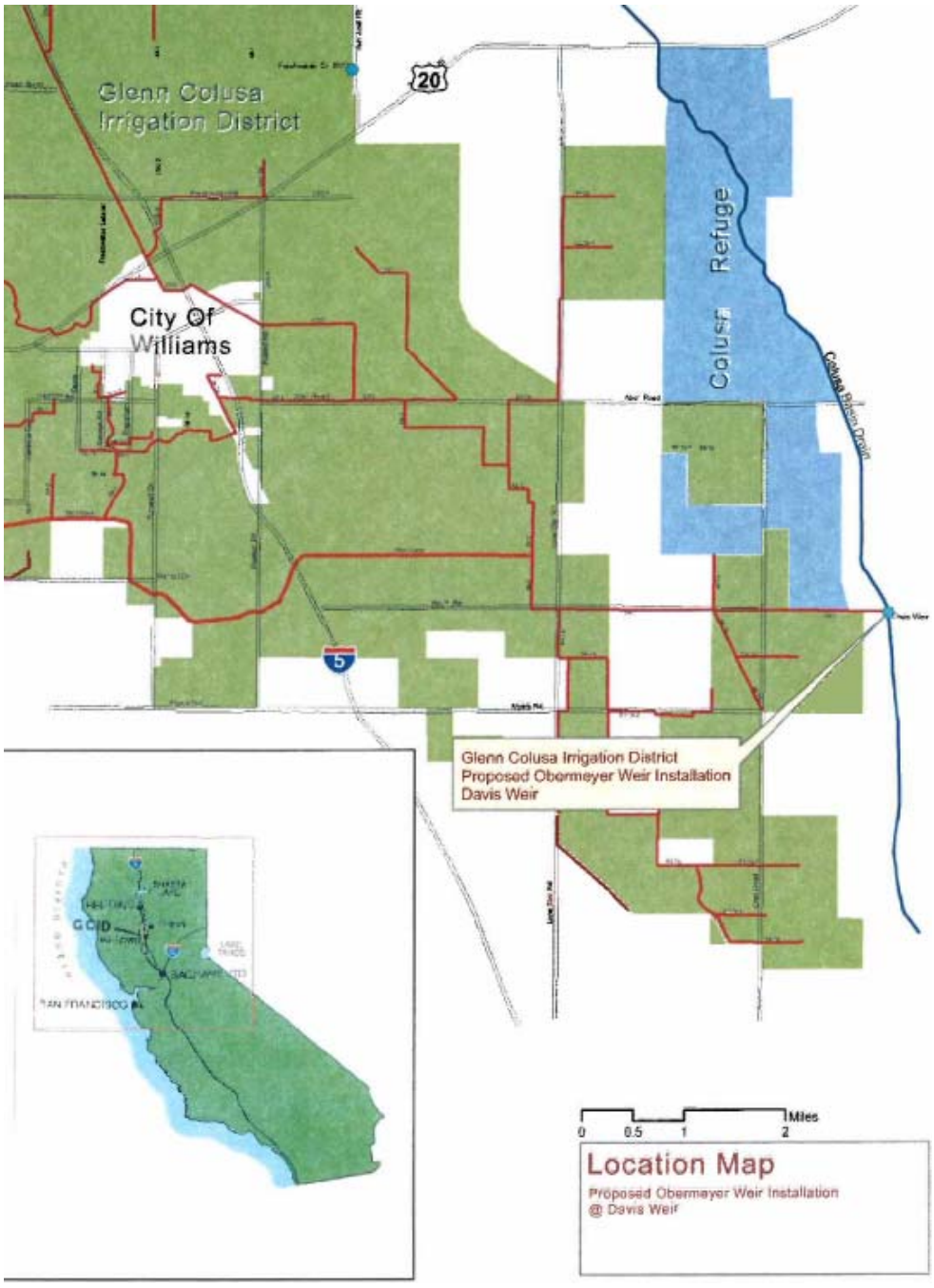

Figure1. Location Map

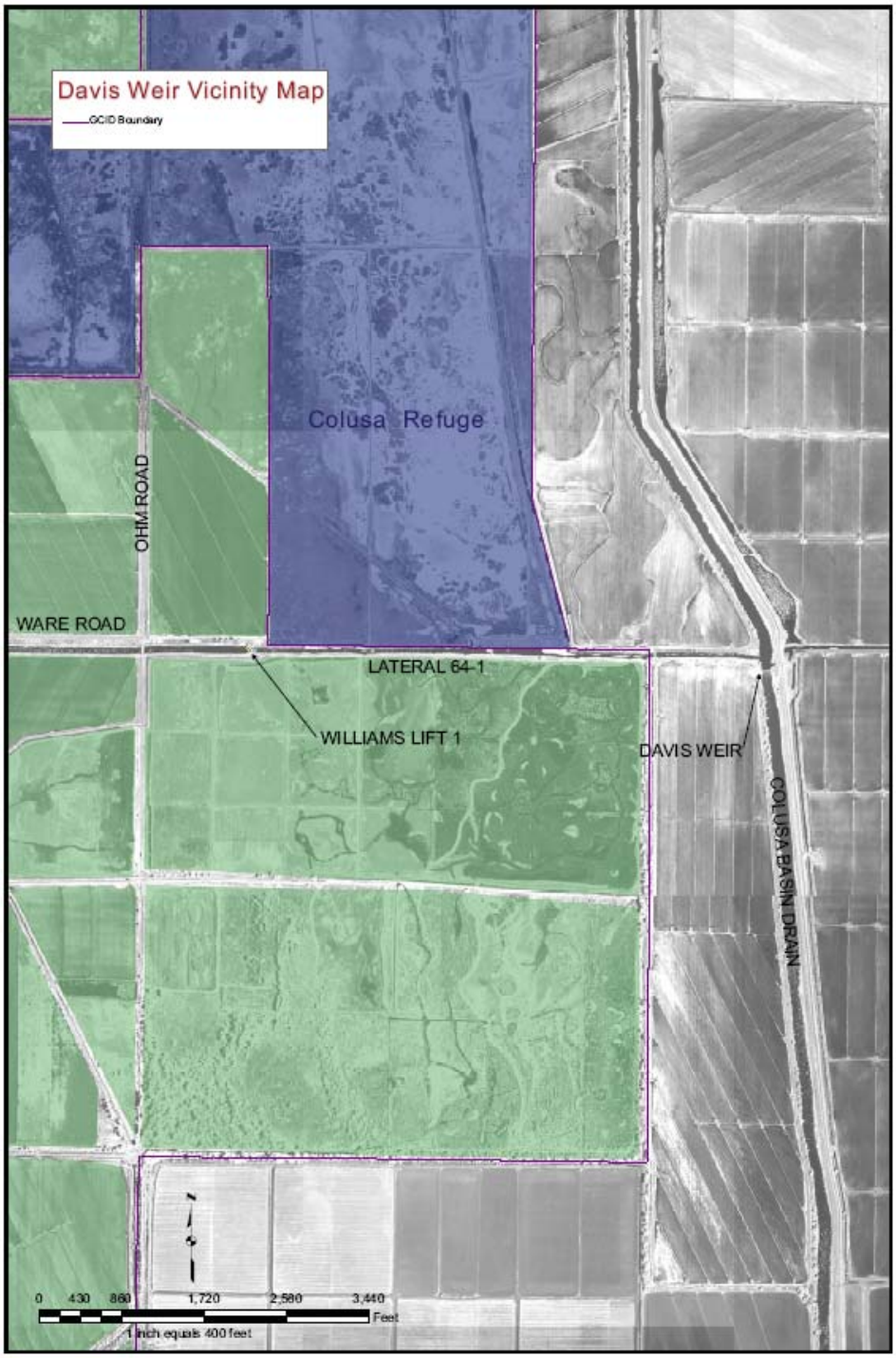

Figure2. Vicinity Map

Figure 3. Foundation of existing weir showing the extent of the floor in relation to the walls.

Figure 4. Existing Davis Weir

Figure 5. Colusa Basin Drain north of weir.

Figure 6. Sample Example Obermeyer Gate installation.

Glenn-Colusa Irrigation District (GCID), as lead agency under CEQA, approved the project (Proposed In-Place Replacement of Glenn-Colusa Irrigation District's Existing Weir Diversion Structure on the Colusa Basin Drain, SCH No. 2010048315) on April 28, 2010 and determined that the project was categorically exempt under a Class 2 Categorical Exemption (CEQA Guidelines Section 15302) covering replacement and reconstruction of existing structures, Class 3 (CEQA Guidelines Section 15303) covering new construction or conversion of small structures, and Class 4 (CEQA Guidelines Section 15304) covering minor alterations to land.

The Board, acting as a responsible agency under CEQA, has reviewed the GCID determination and has independently determined that the project is exempt from CEQA under Class 2 (CEQA Guidelines Section 15302) covering replacement and reconstruction of existing structures, Class 3 (CEQA Guidelines Section 15303) covering new construction or conversion of small structures, and Class 4 (CEQA Guidelines Section 15304) covering minor alterations to land.

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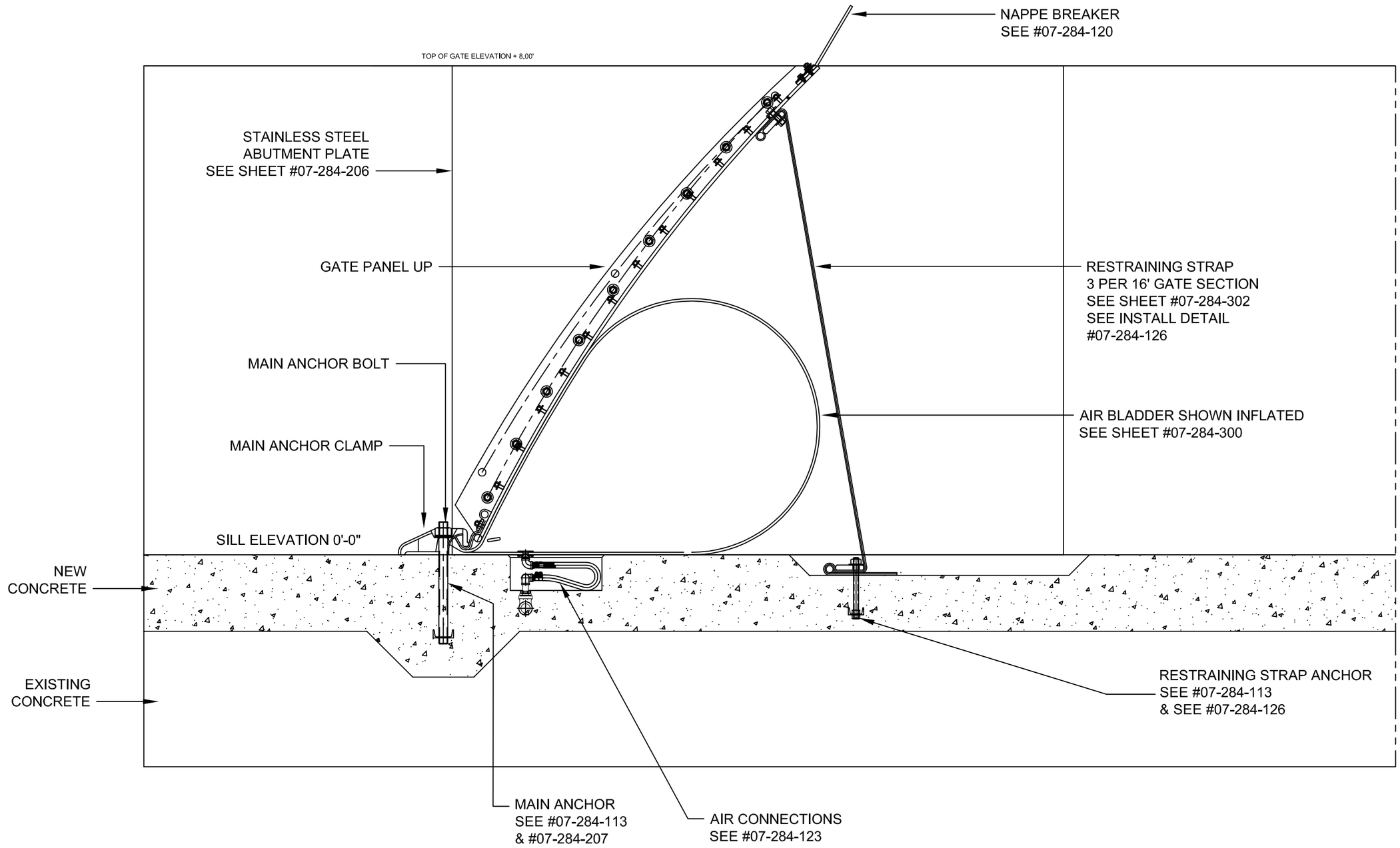


NO	REVISION DESCRIPTION	DATE APRV'D	APRV'D	DRAWN
1	NEW DRAWING	09/17/07		MCS
2	REVISED ABUTMENT TYPE & RS ANCHOR SIZE	10/17/07		MCS
3				
4				
5				
6				
7				

TOL: ± 1/16" UNLESS
TOL: .XX= .060" OTHERWISE
TOL: .XXX= .015" NOTED
TOL: ± 1°

DRAWING DESCRIPTION

SECTION-A ELEVATION
GATE PANEL UP

OBERMEYER
HYDRO, INC
P.O. BOX 668
FORT COLLINS, COLORADO 80522
TEL 970-568-9844 FAX 970-568-9845

SHEETS	SCALE
1 of 1	NO SCALE

JOB
BIJOU

DWG. NO.
07-284-110

D Lateral 64-1

NON-FLOOD SEASON EDGE OF BANK

Exist. Access Road

W N 89° 44' 00" W

GCID ROW S 76° 30'00"E 158.46'

Colusa Drain

GCID ROW S 06°50'00"E

Exist. Reclamation District 2047 Levee

3:1

2:1

Top 54" Gate
in 61" CMP

W top levee

Exist. field road

S edge E

W side access rd
W side levee

Toe W levee

E side access rd
W side levee

Proposed Pad S= 2%

Proposed
Building
10' x 10'

NW cor Weir
top wall 36.83
floor 27.86

NE cor Weir
top wall 36.80
floor 27.86

Fd GCID BM
NW wing Weir

Fd Towill BM
NE wing Weir

Exisitng Weir floor 27.57

36.71 top wall
floor na

5'-0"

New Weir floor 27.57

3' Conduit Trench
See Detail A-A In
Section D

SW cor Weir
top wall 36.87
floor 27.99

SE cor Weir
top wall 36.67
floor 26.66

Field El. 38.12

GCID ROW N 89°44' 00" W 185.00'

Exist. Access Road

Exist. Reclamation Distrid 2047 Levee

West Shoulder Levee Road

East Shoulder Levee Road

E edge top levee

W edge top levee

E side access rd
Toe W levee

Toe W levee
& W side access rd

DRWN BY:	Pcdu
APPVD BY:	B.P.
JOB #:	
DATE:	4-13-2010

Proposed Davis Weir Site Plan
featuring Obermeyer Weir

GLENN-COLUSA IRRIGATION DISTRICT
344 EAST LAUREL STREET
WILLOWS, CALIFORNIA 95988

REVISIONS | DESCRIPTION | DATE | APPVD

GCID GLENN COLUSA IRRIGATION DISTRICT

VERIFY SCALE: BAR IS ONE INCH ON ORIGINAL DRAWING

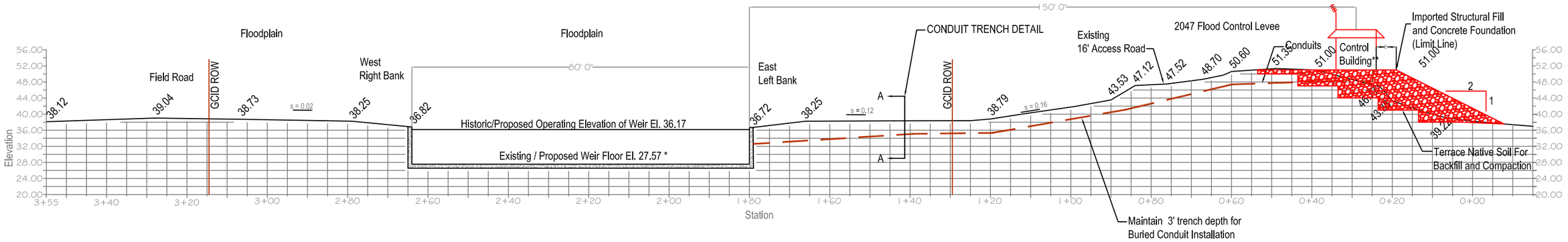
0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

SCALE: 1/8"= 1'

PAGE 1 OF

I:\RACHELLE\AUTOCAD\DAVIS\TOPO.DWG

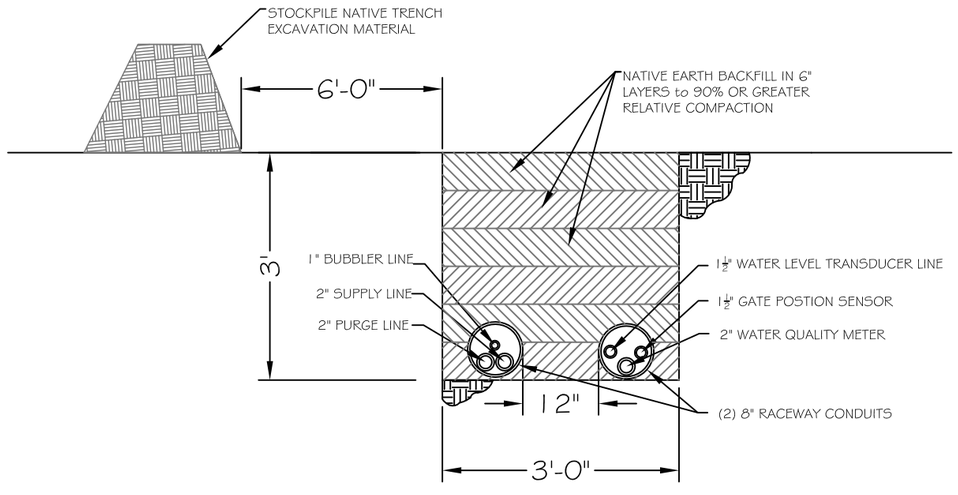


Notes:
*Weir floor is Hydraulic Grade Control and equals the "Low Flow Elevation" Hydraulic Grade Line
**Control Building is "Standard Plan" Manufactured Metal Building on concrete footings w/ Security Locked Entry
Surveyed March 29 2010 - Ref GCID FB 53-60
Elevations are NGVD-29 datum

Scale: 1" = 25'

CONDUIT TENCH DETAIL A-A

$\frac{1}{2}$" = 1'-0"



Proposed Davis Weir Cross-Section
Featuring Obermeyer Weir
Davis Weir
Glenn-Colusa Irrigation District

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